

Notice of Allowability

Application No.

10/816,640

Examiner

Binh C. Tat

Applicant(s)

KITAHARA ET AL.

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/21/06.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 02/02/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


JACK CHIANG
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Andy Schwaab (Reg. No. 38,611) on 02/02/07.

The application has been amended as follow:

Claim 1 line 4 after "designed;" delete "and".

Claim 1 line 4 after "designed"; insert --;

a delay time calculator configured to calculate delay times of the low-threshold cells in state that the upper limit electric potential of the virtual ground line is set--.

Claim 1 lines 8 after "cells"; insert --; **and**

a timing analyzer configured to execute a timing analysis to the layout by using the delay times calculated by the delay time calculator--.

Claim 13 line 4 after "designed;" delete "and".

Claim 13 line 4 after "designed"; insert --;

calculating delay times of the low-threshold cells in state that the upper limit electric potential of the virtual ground line is set--.

Claim 13 lines 7 after "cells"; insert --; **and**

executing a timing analysis to the layout by using the delay times calculated by the delay time calculator--.

Claim 20 line 1 after "product"; insert **--stored on a computer-readable medium--.**

Claim 20 line 5 after "designed;" delete "and".

Claim 20 line 5 after "designed"; insert --;

instructions configured to calculate delay times of the low-threshold cells in state that the upper limit electric potential of the virtual ground line is set--.

Claim 1 lines 8 after "cells"; insert --; and

instructions configured to execute a timing analysis to the layout by using the delay times calculated by the delay time calculator--.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

2. Claims 1-20 are allowed because the prior art does not teach or suggest: an automatic circuit design apparatus comprising: a delay time calculator configured to calculate delay times of the low-threshold cells in state that the upper limit electric potential of the virtual ground line is set; a layout generator configured to generate a layout such that an electric potential of the virtual ground line does not exceed the upper limit electric potential, the layout generated based on the information, the cell library for low-threshold cells, and the cell library for high-threshold cells; and a timing analyzer configured to execute a timing analysis to the layout by using the delay times calculated by the delay time calculator and combination of all other features corresponding to the independent claims.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh C. Tat whose telephone number is 571 272-1908. The examiner can normally be reached on 7:30 - 4:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tat Binh
Patent Examiner
February 2, 2007


JACK CHIANG
SUPERVISORY PATENT EXAMINER